

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (currently amended): ~~An electrolyte composition~~ A photoelectric conversion element comprising an electrolyte composition, wherein the electrolyte composition comprises comprising an ionic liquid and conductive particles,
wherein the electrolyte composition is in the form of a gel without the addition of a gelling agent, and
wherein the conductive particles comprise a material containing carbon as a main component.
2. (canceled).
3. (currently amended): ~~The electrolyte composition~~ The photoelectric conversion element according to claim 1, wherein a content of the conductive particles is not less than 0.05% by weight and not more than 10% by weight with respect to a total amount of the electrolyte composition.
4. (currently amended): ~~The electrolyte composition~~ The photoelectric conversion element according to claim 1, wherein a content of the conductive particles is not less than 0.05% by weight and not more than 10% by weight with respect to the ionic liquid.
5. (canceled).
6. (currently amended): ~~The electrolyte composition~~ The photoelectric conversion element according to claim 5, wherein the material containing carbon as a main component is

one member or a mixture of a plurality of members selected from the group consisting of carbon nanotubes, carbon fibers, carbon black, and other carbon nanoparticles.

7. (currently amended): ~~The electrolyte composition~~The photoelectric conversion element according to claim 6, wherein the carbon nanotubes are either one of or a mixture of single-wall carbon nanotubes and multi-wall carbon nanotubes.

8. (canceled).

9. (currently amended): A photoelectric conversion element, comprising:
a working electrode, the working electrode comprising an electrode substrate and an oxide semiconductor porous film formed on the electrode substrate and sensitized with a dye;
a counter electrode disposed opposing the working electrode; and
an electrolyte layer made of ~~the an~~an electrolyte composition ~~according to claim 1~~ provided between the working electrode and the counter electrode,
wherein the electrolyte composition comprises an ionic liquid and conductive particles,
wherein the electrolyte composition is in the form of a gel without the addition of a gelling agent, and
wherein the conductive particles comprise a material containing carbon as a main component.

10. (currently amended): A dye-sensitized photovoltaic cell, comprising:
a working electrode, the working electrode comprising an electrode substrate and an oxide semiconductor porous film formed on the electrode substrate and sensitized with a dye;
a counter electrode disposed opposing the working electrode; and
an electrolyte layer made of ~~the an~~an electrolyte composition ~~according to claim 1~~ provided between the working electrode and the counter electrode,

wherein the electrolyte composition comprises an ionic liquid and conductive particles,
wherein the electrolyte composition is in the form of a gel without the addition of a
gelling agent, and
wherein the conductive particles comprise a material containing carbon as a main
component.

11. (withdrawn) An electrolyte composition comprising an ionic liquid and oxide semiconductor particles.

12. (withdrawn) The electrolyte composition according to claim 11, further comprising conductive particles.

13. (withdrawn): A gel comprising the electrolyte composition according to claim 11.

14. (withdrawn): The electrolyte composition according to claim 11, wherein the oxide semiconductor particles are one member or a mixture of two or more members selected from the group consisting of TiO_2 , SnO_2 , WO_3 , ZnO , ITO , BaTiO_3 , Nb_2O_5 , In_2O_3 , ZrO_2 , Ta_2O_5 , La_2O_3 , SrTiO_3 , Y_2O_3 , Ho_2O_3 , Bi_2O_3 , CeO_2 , and Al_2O_3 .

15. (withdrawn) The electrolyte composition according to claim 14, wherein the TiO_2 is either one of or a mixture of titanium oxide nanotubes and titanium oxide nanoparticles.

16. (withdrawn): The electrolyte composition according to claim 12, wherein the conductive particles are made of a material containing carbon.

17. (withdrawn): The electrolyte composition according to claim 16, wherein the material containing carbon as a main component is one member or a mixture of two or more members selected from the group consisting of carbon nanotubes, carbon fibers, carbon black, and other carbon nanoparticles.

18. (withdrawn): The electrolyte composition according to claim 17, wherein the carbon nanotubes are either one of or a mixture of single-wall carbon nanotubes and multi-wall carbon nanotubes.

19. (withdrawn): The electrolyte composition according to claim 11, wherein a compounding amount of the oxide semiconductor particles is not less than 0.05% by weight and not more than 70% by weight with respect to a total amount of the electrolyte composition.

20. (withdrawn): The electrolyte composition according to claim 12, wherein a total compounding amount of the oxide semiconductor particles and the conductive particles is not less than 0.05% by weight and not more than 70% by weight with respect to a total amount of the electrolyte composition.

21. (withdrawn): The electrolyte composition according to claim 11, wherein a compounding amount of the oxide semiconductor particles is not less than 0.05% by weight and not more than 70% by weight with respect to the ionic liquid.

22. (withdrawn): The electrolyte composition according to claim 12, wherein a total compounding amount of the oxide semiconductor particles and the conductive particles is not less than 0.05% by weight and not more than 70% by weight with respect to the ionic liquid.

23. (withdrawn): A photoelectric conversion element comprising the electrolyte composition according to claim 11 contained as an electrolyte.

24. (withdrawn): A photoelectric conversion element, comprising:
a working electrode, the working electrode comprising an electrode substrate and an oxide semiconductor porous film formed on the electrode substrate and sensitized with a dye;
a counter electrode disposed opposing the working electrode; and

an electrolyte layer made of the electrolyte composition according to claim 11 provided between the working electrode and the counter electrode.

25. (withdrawn): A dye-sensitized photovoltaic cell, comprising:

a working electrode, the working electrode comprising an electrode substrate and an oxide semiconductor porous film formed on the electrode substrate and sensitized with a dye;

a counter electrode disposed opposing the working electrode; and

an electrolyte layer made of the electrolyte composition according to claim 11 provided between the working electrode and the counter electrode.

26. (withdrawn): An electrolyte composition comprising an ionic liquid and insulating particles.

27. (withdrawn): A gel comprising the electrolyte composition according to claim 26.

28. (withdrawn): The electrolyte composition according to claim 26, wherein the insulating particles are one member or a mixture of both members selected from the group consisting of diamond and boron nitride.

29. (withdrawn): The electrolyte composition according to claim 26, wherein a compounding amount of the insulating particles is no less than 0.05% by weight and no more than 70% by weight with respect to a total amount of the electrolyte composition.

30. (withdrawn): A photoelectric conversion element comprising the electrolyte composition according to claim 26 as an electrolyte.

31. (withdrawn): A photoelectric conversion element, comprising:

a working electrode, the working electrode comprising an electrode substrate and an oxide semiconductor porous film formed on the electrode substrate and sensitized with a dye;

a counter electrode disposed opposing the working electrode; and
an electrolyte layer made of the electrolyte composition according to claim 26 provided between the working electrode and the counter electrode.

32. (withdrawn): A dye-sensitized photovoltaic cell, comprising:
a working electrode, the working electrode comprising an electrode substrate and an oxide semiconductor porous film formed on the electrode substrate and sensitized with a dye;
a counter electrode disposed opposing the working electrode; and
an electrolyte layer made of the electrolyte composition according to claim 26 provided between the working electrode and the counter electrode.

33. (currently amended): ~~The electrolyte composition~~The photoelectric conversion element according to claim 51, wherein the material containing carbon as a main component includes carbon nanotubes, carbon fibers, carbon black, ~~and the like.~~

34. (withdrawn): The electrolyte composition according to claim 16, wherein the material containing carbon as a main component includes carbon nanotubes, carbon fibers, carbon black, and the like.

35. (currently amended): ~~The electrolyte composition~~The photoelectric conversion element according to claim 1 wherein the ionic liquid is a room temperature molten salt that is liquid at room temperature.

36. (currently amended): ~~The electrolyte composition~~The photoelectric conversion element according to claim 33-35 wherein the molten salt comprises a cation selected from the group consisting of a compound containing a quaternized nitrogen atom, a quaternary imidazolium derivative, a quaternary pyridinium derivative, and a quaternary ammonium derivative.

37. (currently amended): ~~The electrolyte composition~~The photoelectric conversion element according to claim 35 wherein the molten salt comprises an anion selected from the group consisting of BF_4^- , PF_6^- , $\text{F}(\text{HF})_n^-$, bis(trifluoromethylsulfonyl)imide $[\text{N}(\text{CF}_3\text{SO}_2)_2]^-$, and iodide ions.

38. (currently amended): ~~The electrolyte composition~~The photoelectric conversion element according to claim 1 wherein the conductive particles have a specific resistance of $1.0 \times 10^{-2} \Omega \cdot \text{cm}$ or less.

39. (currently amended): ~~The electrolyte composition~~The photoelectric conversion element according to claim 1 further comprising oxidation-reduction pairs.

40. (new): The photoelectric conversion element according to claim 6, wherein the carbon fibers have a diameter of between 50 nm and 1 μm and a length of between 1 μm to 100 μm .

41. (new): The photoelectric conversion element according to claim 6, wherein the carbon black has a particle diameter of between 1 nm and 500 nm.

42. (new): The photoelectric conversion element according to claim 7, wherein the single-wall carbon nanotubes are between 0.5 nm and 10 nm in diameter and between 10 nm to 1 μm in length.

43. (new): The photoelectric conversion element according to claim 7, wherein the multi-wall carbon nanotubes are between 1 nm and 100 nm in diameter and between 50 nm to 50 μm in length.